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Abstract

(57)【要約】

(57) [Abstract]

【目的】

[Objective]

多様な形状の貼付部位に対し、1つの形状の接
着テープを正確かつ迅速に貼付可能な接着テ
ープ貼付装置を提供する。

Vis-a-vis adhesive site of diverse configuration, adhesive tape
of configuration of one sticking possible adhesive tape
applicator machine is offered accurately and quickly.

【構成】

[Constitution]

接着テープ貼付装置 10 は、ハンドル 12、テープ
摺動台 14、テンションポール 16、ガイド部材 18、
貼付ヘッド 20、並びにハンドル 12 及びテープ摺
動台 14 を支持する支持壁 22 からなる。

adhesive tape applicator machine 10 consists of handle 12,
tape rubbing table 14, tension pole 16, guide 18, sticking
head 20, and support wall 22 which supports handle 12 and
tape rubbing table 14.

テープ摺動台 14 は、上面に離型紙付接着テー
プの進入路及び離型紙の排出路を備え、下面
に貼付ヘッド 20 方向へ延びる離型紙除去済接
着テープの案内路を備える。

tape rubbing table 14 has Shin inlet path of mold release
paper attaching adhesive tape and the exhaust line of mold
release paper for top, has guide of mold release paper
removal and adhesive tape which extends to sticking head 20
direction in bottom surface.

テンションポール 16 は、貼付作業時に接着テー
プに所定の張力を付与する。

tension pole 16 grants predetermined tension to adhesive tape
at time of adhesion work.

ガイド部材 18 は、貼付作業時にフレーム体を両
側から挟持し、それにより、フレーム体の伸長形
状に追従する貼付装置 10 の移動を可能にす
る。

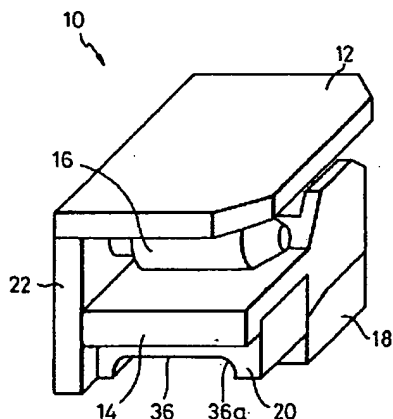
At time of adhesion work frame clamping it does guide 18,
from both sides, it makes movement of applicator machine 10
which follows to the decompression configuration of frame
with that, possible.

貼付ヘッド 20 は、貼付部位の表面形状に略等し
い仕上面 36a を有する貼付面 36 を備える。

Sticking head 20 has adhesive surface 36 which possesses
finished surface 36a which abbreviation is equal to surface
profile of adhering site

profile of adhesive site.

接着テープ貼付装置の斜視図



12…ハンドル
14…テープ摺動台
16…テンションボール
18…ガイド部材
20…貼付ヘッド
22…支持壁
36…貼付面
36a…貼付面

Claims

【特許請求の範囲】

【請求項 1】

フレーム体の表面に樹脂製接着テープを貼付する接着テープ貼付装置であって、

握持部を備えた支持部材と、

前記支持部材に固定されるテープ摺動台と、

前記テープ摺動台の一側に形成される離型紙付樹脂製接着テープの進入路、該摺動台に関して該進入路の反対側に形成される離型紙除去済樹脂製接着テープの案内路、及び該進入路と該案内路との間で該摺動台の屈曲壁面によって形成される離型紙の排出路からなるテープ経路手段と、

前記テープ経路手段の前記案内路の終端位置に配置されるとともに、フレーム体の表面形状に実質的同一の面部分を有する貼付面を備えて前記テープ摺動台に支持され、少なくとも該貼付面を含む部分が弾性材料からなり、該貼付面によって樹脂製接着テープをフレーム体の表面に圧着する貼付ヘッドと、

[Claim(s)]

[Claim 1]

With adhesive tape applicator machine which sticks resin adhesive tape in surface of frame,

support member which has 握 holding section and,

tape rubbing table which is locked to aforementioned support member and,

tape path means. which consists of exhaust line of mold release paper which guide, and said Shin inlet path of mold release paper removal end resin adhesive tape which is formed to opposite side of said Shin inlet path in regard to Shin inlet path, said rubbing table of the mold release paper attaching resin adhesive tape which is formed to one side of theaforementioned tape rubbing table and between said guide is formed with bending wall surface of said rubbing table

As it is arranged in terminal position of aforementioned guide of theaforementioned tape path means, having adhesive surface which possesses substantial same surface portion in surface profile of frame, it is supported in theaforementioned tape rubbing table, sticking head where portion which atleast includes said adhesive surface consists of elastic material, with said adhesive surface the resin adhesive tape pressure

面に圧着する貼付ヘッドと、

前記貼付ヘッドに近接して該貼付ヘッドの略両側端位置に固定的に配置され、フレーム体を挟持するガイド面をそれぞれに備えて、フレーム体の伸長形状に追従した該貼付ヘッドの移動を可能にするガイド手段と、

前記テープ経路手段内で移動する樹脂製接着テープに所定の張力を付与する張力付与手段、とを具備したことを特徴とする接着テープ貼付装置。

【請求項 2】

前記貼付ヘッドは、それ自体を前記貼付面方向へ付勢する付勢手段を備えて前記テープ摺動台に引き込み可能に支持され、前記ガイド手段は、接着テープの貼付作業の間、前記付勢手段の付勢力に抗して前記接着テープ貼付装置を作業位置に掛止して、前記貼付ヘッドの前記貼付面とフレーム体表面との圧接状態を維持する掛止手段を備える請求項 1 記載の接着テープ貼付装置。

Specification

【発明の詳細な説明】

【0001】

【産業上の利用分野】

本発明は、接着テープ貼付装置に関し、特に、自動車車体の窓枠等のフレーム体に装飾目的で貼付されるテープ状の樹脂製片面接着フィルムの貼付装置として使用可能な接着テープ貼付装置に関する。

【0002】

【従来の技術】

自動車の車体の各ピラーやドアの窓枠には、車体外部から視認できる部分に、主に装飾のために一般に黒色の塗装が施されている。

近年、塗装作業が及ぼす環境への影響を改善するために、これらの箇所へ塗装を施す代わりに、テープ状の樹脂製接着フィルムを貼付する方法が実施されている。

従来、このようなフィルム貼付方法においては、大判の樹脂製片面接着フィルムから窓枠等の貼付部位の形状に合わせて打ち抜き形成した

bonding makes surface of frame and,

proximity making aforementioned sticking head, guide means which makes movement of said sticking head which follows to the decompression configuration of frame making provision guide surface which in abbreviation both edges position of said sticking head is arranged in fixable, clamping does frame for respectively, possible and,

tension imparting means, which grants predetermined tension to resin adhesive tape which is moved inside aforementioned tape path means was possessed adhesive tape applicator machine. which is made feature

[Claim 2]

Aforementioned sticking head, that itself to aforementioned adhesive surface direction in aforementioned tape rubbing table urging means which energization is done having retraction possibly to be supported, aforementioned guide means, between adhesion work of adhesive tape, resist to applied force of the aforementioned urging means, aforementioned adhesive tape applicator machine as work position stopping designating, press contact state of aforementioned adhesive surface and frame surface of the aforementioned sticking head is maintained adhesive tape applicator machine. which is stated in Claim 1 which has stopping means

[Description of the Invention]

[0001]

[Field of Industrial Application]

this invention regards adhesive tape applicator machine, it regards useable adhesive tape applicator machine especially, as the applicator machine of resin one surface adhesive film of tape which is stuck to window frame or other frame of the automobile body with decoration object.

[0002]

[Prior Art]

coating of black is administered to portion which visible it is possible to each pillar of vehicle body of automobile and window frame of door, from vehicle body outside, mainly generally because of decoration.

Recently, in order to improve influence to environment which the coating work causes, instead of administering coating, method which sticks resin adhesive film of tape is executed to these site.

Until recently, regarding to this kind of film sticking method, from resin one surface adhesive film of large format adjusting to configuration of window frame or other adhesive site, the

テープ状フィルムを、圧着具を用いて手作業により貼付する方法が一般的に実施されている。

この作業では、まずフィルムの接着面に被着された離型紙を剥がし、貼付部位に対して目視によりフィルムを位置決めし、篋状の圧着具を用いて空気を追い出しつつフィルム的一端から徐々に貼付する。

窓枠等、断面形状において両縁に曲面を有する部位に貼付する場合は、まず中間の平坦部分に上記のようにしてフィルムの中央部を貼付し、次いで両縁の曲面部分へフィルムの両縁部を巻込むようにして、同様に空気を追い出しつつ貼付する。

このとき、曲面部分にフィルム両縁部が確実に貼付されるように、フィルム中央部の貼付時に、貼付部位に対するフィルムの位置決めを正確に行う必要がある。

[0003]

【発明が解決しようとする課題】

上記のような手作業によるテープ状片面接着フィルムの貼付工程は、特にフィルムの位置決め段階において熟練者による極めて慎重な作業を要する。

また、一般に先端が直線形状の篋状圧着具を用いるので、上記のように貼付部位の断面形状によっては、1つのフィルムを貼付するために、フィルムの長手方向へ空気を追い出しつつ貼付する貼付動作を複数回に亘って繰り返す実施しなければならない、作業時間が必然的に長くなる。

さらに、予め貼付部位の形状に合致されたテープ状フィルムを、大判の樹脂製片面接着フィルムから打ち抜いて形成しなければならないので、材料費が高む課題を有する。

[0004]

本発明は、上記の従来技術における各課題を解決するために鋭意、工夫改善を施したものであり、その目的は、取扱いが容易でかつフィルムの正確かつ迅速な貼付が可能であり、貼付部位の形状に合わせたテープ状接着フィルムの事前成形を不要として、材料費及び作業時間を削減し得る接着テープ貼付装置を提供することにある。

[0005]

【課題を解決するための手段】

notch tape film which it formed, making use of pressure bonding tool method which it sticks with manual operation is executed generally.

While with this job, peeling mold release paper which is applied to adhering surface of film first, registration doing film with visual vis-a-vis adhesive site, expelling air making use of pressure bonding tool of 篋 condition, it sticks gradually from one end of film.

When it sticks in site which possesses curved surface in both edges in cross section shape such as window frame, while first sticking central portion of film in flat portion of intermediate as description above, expelling air insame way next to involve both edges of film to curved surface part amount of both edges, it sticks.

In order this time, for film both edges to be stuck securely in curved surface part amount, when sticking film central portion, it is necessary to do registration of film for adhesive site accurately.

[0003]

[Problems to be Solved by the Invention]

As description above with manual operation sticking step of tape one surface adhesive film requires quite prudent job with expert in registration step of the specially film.

In addition, because end uses 篋 condition pressure bonding tool of the straight lines geometry generally, as description above with cross section shape of adhesive site, while in order to stick film of one, expelling air to longitudinal direction of film repeatedly you must execute sticking operation which it sticks over multiple times, work time inevitably becomes long.

Furthermore, driving out tape film which coincides to configuration of the adhesive site beforehand, from resin one surface adhesive film of large format, you must form, because, it possesses problem where material consumption increases.

[0004]

As for this invention, being something which administers diligence, device improvement in order to solve each problem in above-mentioned Prior Art, as for object, handling being easy, and accuracy of film and quick sticking being possible, with thing preformation shape of tape adhesive film which is adjusted to configuration of adhesive site as unnecessary, It is to offer adhesive tape applicator machine which can reduce material consumption and work time.

[0005]

[Means to Solve the Problems]

上記目的を達成するために、本発明は、フレーム体の表面に樹脂製接着テープを貼付する接着テープ貼付装置であって、握持部を備えた支持部材と、支持部材に固定されるテープ摺動台と、テープ摺動台の一側に形成される離型紙付樹脂製接着テープの進入路、テープ摺動台に関して進入路の反対側に形成される離型紙除去樹脂製接着テープの案内路、及び進入路と案内路との間でテープ摺動台の屈曲壁面によって形成される離型紙の排出路からなるテープ経路手段と、テープ経路手段の案内路の終端位置に配置されるとともに、フレーム体の表面形状に実質的同一の面部分を有する貼付面を備えてテープ摺動台に支持され、少なくとも貼付面を含む部分が弾性材料からなり、貼付面によって樹脂製接着テープをフレーム体の表面に圧着する貼付ヘッドと、貼付ヘッドに近接してその略両側端位置に固定的に配置され、フレーム体を挟持するガイド面をそれぞれに備えて、フレーム体の伸長形状に追従した貼付ヘッドの移動を可能にするガイド手段と、テープ経路手段内で移動する樹脂製接着テープに所定の張力を付与する張力付与手段とを具備したことを特徴とする接着テープ貼付装置を提供する。

【0006】

好適な実施態様によれば、上記貼付ヘッドが、それ自体を上記貼付面方向へ付勢する付勢手段を備えて上記テープ摺動台に引き込み可能に支持され、かつ上記ガイド手段が、接着テープの貼付作業の間、上記付勢手段の付勢力に抗して上記接着テープ貼付装置を作業位置に掛止して、上記貼付ヘッドの上記貼付面とフレーム体表面との圧接状態を維持する掛止手段を備える接着テープ貼付装置が提供される。

【0007】

【作用】

離型紙付接着テープをテープ経路手段の進入路に配置し、テープ先端を離型紙と接着テープとに分離して、接着テープのみをテープ摺動台の屈曲壁面によって撓曲した後、案内路を経て貼付ヘッドの貼付面上に配置する。

In order to achieve above-mentioned object, as for this invention, with adhesive tape applicator machine which sticks resin adhesive tape in surface of frame, tape rubbing table which is locked to support member and support member which have 握 holding section and, As it is arranged in terminal position of guide of tape path means. tape path means which consists of exhaust line of mold release paper which guide, and Shin inlet path of mold release paper removal end resin adhesive tape which is formed to opposite side of the Shin inlet path in regard to Shin inlet path, tape rubbing table of mold release paper attaching resin adhesive tape which is formed to one side of tape rubbing table and between guide is formed with bending wall surface of tape rubbing table, Having adhesive surface which possesses substantial same surface portion in the surface profile of frame, it is supported in tape rubbing table, portion which at least includes adhesive surface consists of elastic material, with adhesive surface the proximity designates resin adhesive tape as sticking head and and sticking head which pressure bonding are made surface of frame in the abbreviation both edges position is arranged in fixable, It possessed tension imparting means which grants predetermined tension to resin adhesive tape which it moves inside guide means and tape path means which make movement of the sticking head which follows to decompression configuration of frame making provision guide surface clamping doing frame for respectively, possible it offers adhesive tape applicator machine which is made feature.

【0006】

According to preferred embodiment, above-mentioned sticking head, that itself having urging means which energization is done to above-mentioned adhesive surface direction, retraction possibly to be supported in above-mentioned tape rubbing table, at same time above-mentioned guide means, between adhesion work of adhesive tape, resist to applied force of above-mentioned urging means, stopping designating above-mentioned adhesive tape applicator machine as work position, Maintains press contact state of above-mentioned adhesive surface and frame surface of above-mentioned sticking head adhesive tape applicator machine which has stopping means is offered.

【0007】

[Working Principle]

To arrange mold release paper attaching adhesive tape in Shin inlet path of tape path means, separating tape end with into mold release paper and adhesive tape, only adhesive tape bending after doing, passing by guide with bending wall surface of the tape rubbing table, it arranges on adhesive surface of sticking head.

この状態で接着テープの先端をさらに引き出すと、離型紙はテープ摺動台の屈曲壁面部分で自動的に接着テープから分離され、排出路から排出される。

次いでこの接着テープ貼付装置を、ガイド手段のガイド面がフレーム体を挟持するようにしてフレーム体に載せ、貼付ヘッドの貼付面によって接着テープ先端をフレーム体に圧着させる。

その状態で、作業者は支持部材の握持部を握持して、貼付ヘッドをフレーム体に圧接させつつフレーム体の伸長方向へ貼付装置を移動させる。

貼付装置は、ガイド手段の作用によってフレーム体の伸長形状に追従して移動し、自動的に離型紙を除去した接着テープが、貼付ヘッドによってフレーム体の表面形状に従って正確に貼付される。

樹脂製接着テープは、長手方向へある程度自由に伸びるので、矩形細長帯状の接着テープを使用して湾曲した伸長形状を有するフレーム体への貼付が可能となる。

【0008】

【実施例】

以下、添付図面に示した好適な実施例に基づき、本発明をさらに詳細に説明する。

図1を参照すると、本発明の第1実施例による接着テープ貼付装置10(以下、単に貼付装置10と言う)は、ハンドル12、テープ摺動台14、テンションポール16、ガイド部材18、貼付ヘッド20、並びにハンドル12及びテープ摺動台14を支持する支持壁22からなる。

ハンドル12は、支持手段である支持壁22の上端に握持部として固定され、使用者が片手で握持し易い形状に形成される。

テープ摺動台14は、ハンドル12との間に所定の空間を形成して支持壁22の側面に固定される。

テープ摺動台14は、図2(a)に実線及び破線で、また図4に断面で示すように、上面に、離型紙付のテープ状樹脂製接着フィルム(以下、単に接着テープと言う)の摺動進入路を形成する水平進入面24と、水平進入面24より高く配置され、離型紙の摺動排出路を形成する水平排出面26と、これら水平進入面24及び水平排出面26を相互に連結する傾斜連結面28とを備え、

When end of adhesive tape furthermore is pulled out with this state, mold release paper at bending wall surface part amount of tape rubbing table is separated by automatic from adhesive tape, is discharged from exhaust line.

Next, it places in frame this adhesive tape applicator machine, that guide surface of guide means clamping does frame, with adhesive surface of sticking head the pressure bonding designates adhesive tape end as frame.

With state, worker 握 holding doing 握 holding section of support member, while pressing sticking head in frame, moves the applicator machine to decompression direction of frame.

Following to decompression configuration of frame in action of guide means, it moves applicator machine, adhesive tape which removes mold release paper in automatic, following to surface profile of frame with sticking head, it is stuck accurately.

Because resin adhesive tape certain extent extends to longitudinal direction freely, rectangular using adhesive tape of strip long and narrow, sticking to frame which possesses decompression configuration which curves becomes possible.

【0008】

【Working Example(s)】

this invention furthermore is explained in detail below, on basis of preferred Working Example which is shown in attached figure.

When Figure 1 is referred to, adhesive tape applicator machine 10 (Below, you call applicator machine 10 simply) consists of handle 12, tape rubbing table 14, tension pole 16, guide 18, sticking head 20, and support wall 22 which supports handle 12 and tape rubbing table 14 with first Working Example of this invention.

handle 12 is locked by top end of support wall 22 which is a support means, as the 握 holding section user is one hand and it is formed to the configuration which 握 holding it is easy to do.

tape rubbing table 14, forming predetermined space between handle 12, is locked to side surface of support wall 22.

horizontal discharge aspect 26 where tape rubbing table 14 is arranged, as in the Figure 2 (a) with solid line and dashed line, in addition in Figure 4 shown with cross section, in top, compared to horizontal penetration aspect more highly 24 which forms rubbing Shin inlet path of tape resin adhesive film (Below, you call adhesive tape simply) of the mold release paper attaching and horizontal penetration aspect 24, forms rubbing exhaust line of mold release paper and, These

かつ下面に、上面の水平排出面 26 の屈曲端部 26a から貼付ヘッド 20 方向へ下向きに傾斜して、離型紙を除去した接着テープの摺動案内路を形成する傾斜案内面 30 を備える。

上面の水平排出面 26 及び下面の傾斜案内面 30 は、テープ摺動台 14 の延長側壁 14a 及び 14b と支持壁 22 とによって両側部を限定され、接着テープの全幅よりもやや幅広のテープ経路を形成する。

【0009】

テンションポール 16 は、ハンドル 12 とテープ摺動台 14 との間で支持壁 22 の側面に固定される。

テンションポール 16 の下端面は、テープ摺動台 14 の上面の水平排出面 26 よりも低い位置に配置され、かつ水平進入面 24 及び傾斜連結面 28 との間に離型紙付接着テープを遊挿する所定の間隙を形成する。

これにより接着テープは、水平排出面 26 方向へ引っ張られる際に常に所定の張力を受けることとなる。

【0010】

ガイド部材 18 は、テープ摺動台 14 の下方の延長側壁 14b の下端及びこれに対向する支持壁 22 の下端の各々に固定され、相互に対向するガイド面 32 (図 2(b) 及び(c)参照) をそれぞれに備える。

ガイド面 32 は、図 2(c) に示すように、延長側壁 14b 及び支持壁 22 の各内面より内方へ僅かに突出し、テープ摺動台 14 の傾斜案内面 30 に対向する肩部 34 を形成する。

ガイド部材 18 は、貼付作業時に例えば窓枠等のフレーム体をガイド面 32 によって両側から挟持し、それにより、フレーム体の伸長形状に追従する貼付装置 10 の移動を可能にする。

したがってガイド部材 18 は、貼付部位に損傷を与えないように、アクリル等の樹脂材料からなることが好ましい。

【0011】

貼付ヘッド 20 は、ゴム等の弾性材料からなり、テープ摺動台 14 の水平進入面 24 の下方に固

horizontal penetration aspects it has inclined connecting surface 28 which connects 24 and horizontal discharge aspect 26 mutually, at same time in bottom surface, from bending end 26a of horizontal discharge aspect 26 of top inclines to downward to sticking head 20 direction, it has inclined guide surface 30 which forms rubbing guide of adhesive tape which removes mold release paper.

horizontal discharge aspect inclined guide surface 30 of 26 of top and the bottom surface is limited parts on both sides by extended sidewall 14a and 14 b and the support wall 22 of tape rubbing table 14, forms tape path of wide a little from the entire width of adhesive tape.

【0009】

tension pole 16 is locked to side surface of support wall 22 between handle 12 and tape rubbing table 14 .

bottom end surface of tension pole 16 is arranged in low position in comparison with horizontal discharge aspect 26 of top of tape rubbing table 14, at same time horizontal penetration aspect forms predetermined gap where inserts mold release paper attaching adhesive tape between 24 and inclined connecting surface 28 .

Because of this adhesive tape means with always to receive predetermined tension the occasion where it is pulled to horizontal discharge surface 26 direction.

【0010】

guide 18 bottom end of extended sidewall 14b of lower of tape rubbing table 14 and is locked by each of bottom end of support wall 22 which opposes to this, has guide surface 32 (Figure 2 (b) and (c) reference) which opposes mutually respectively.

guide surface 32, as shown in Figure 2 (c), from extended sidewall 14b and each interior surface of support wall 22 protruding does barely to internal direction, forms shoulder part 34 which opposes to inclined guide surface 30 of tape rubbing table 14.

At time of adhesion work for example window frame or other frame with guide surface 32 clamping it does guide 18, from both sides, it makes movement of applicator machine 10 which follows to decompression configuration of frame with that, possible.

Therefore as for guide 18, in order not to give injury to the adhesive site, it consists of acrylic or other resin material, it is desirable .

【0011】

Sticking head 20 consists of rubber or other elastic material, is locked to lower of horizontal penetration aspect 24 of tape

定される。

貼付ヘッド 20 の下面には、テープ摺動台 14 の下面の傾斜案内面 30 に連通する貼付面 36 が形成される。

貼付面 36 は、貼付作業時に作業者による押付け力を集中して受け、接着テープを裏側から弾性的に押圧してフレーム体表面に確実に付着させる。

また、貼付面 36 は、図 1 及び図 2(b)に示すように、貼付部位の断面形状に略等しくかつ接着テープの全幅より小さな幅を有する仕上面 36a を接着テープの出口側に備え、他方、図 3 に示すように、接着テープの入口側、すなわちテープ摺動台 14 の傾斜案内面 30 に連通する側に、接着テープの全幅よりやや大きな幅の平坦な導入斜面 36b を備える。

そして、導入斜面 36b から仕上面 36a へ至る間は、貼付ヘッド 20 の下方へ突出する両側壁 38 によってテーパ状に縮幅される。

したがって、貼付作業時に、テープ摺動台 14 から貼付ヘッド 20 へ送られた接着テープは、まず導入斜面 36b によって(正確には導入斜面 36b の下端部によって)貼付部位の平坦部分に貼付され、貼付ヘッド 20 の移動に従って両側壁 38 によって徐々に両縁部を巻込みつつ、仕上面 36a によって貼付部位の曲面部分に貼付される。

[0012]

上記の貼付装置 10 の作用を以下に説明する。

図 4 に示すように、まず大判の樹脂製片面接着フィルムから打ち抜き形成された矩形細長帯形状の離型紙付接着テープ TP を、貼付装置 10 の側方からテープ摺動台 14 とテンションポール 16 との間隙に遊挿し、テープ摺動台 14 の上面の水平進入面 24、傾斜連結面 28、及び水平排出面 26 に載せる。

次いで離型紙付接着テープ TP の先端を離型紙 P と接着テープ T とに分離し、接着テープ T のみを水平排出面 26 の屈曲端部 26a から下方へ巻込んでテープ摺動台 14 の下面の傾斜案内面 30 に載せ、さらに貼付ヘッド 20 の貼付面 36 の導入斜面 36b に載せる。

rubbing table 14.

adhesive surface 36 which is connected to inclined guide surface 30 of bottom surface of the tape rubbing table 14 is formed in bottom surface of sticking head 20.

At time of adhesion work concentrating pressing force with worker, it receives adhesive surface 36, from back side presses adhesive tape in elastic and deposits securely on frame surface.

In addition, as for adhesive surface 36, as shown in Figure 1 and Figure 2 (b), as shown in other, Figure 3 finished surface 36a which possesses smaller width than entire width of adhesive tape abbreviation to be equal to cross section shape of adhesive site and making provision for outlet side of adhesive tape, on side which is connected to inlet side, of adhesive tape namely inclined guide surface 30 of the tape rubbing table 14, It has planar introduction inclined surfaces 36b of width which is a little larger than entire width of adhesive tape.

And, while reaching to finished surface 36a from introduction inclined surfaces 36b, with the both side walls 38 which protruding is done to lower of sticking head 20 the shrinkage width it makes taper.

Therefore, at time of adhesion work, adhesive tape which is sent to the sticking head 20 from tape rubbing table 14 is stuck by flat portion of (Accurately with bottom end of introduction inclined surfaces 36b) adhesive site first with introduction inclined surfaces 36b, following to movement of the sticking head 20, with both side walls 38 gradually while winding, is stuck the both edges to curved surface part amount of adhesive site with finished surface 36a.

[0012]

Action of above-mentioned applicator machine 10 is explained below.

As shown in Figure 4, rectangular notch was formed first from resin one surface adhesive film of large format long and narrow from side direction of applicator machine 10 it inserts mold release paper attaching adhesive tape TP of band configuration, in gap of tape rubbing table 14 and tension pole 16, horizontal penetration aspect 24 of top of tape rubbing table 14, Hajime makes inclined connecting surface 28, and horizontal discharge aspect 26.

Next, end of mold release paper attaching adhesive tape TP is separated with into mold release paper P and adhesive tape T, only adhesive tape T involves from bending end 26a of horizontal discharge aspect 26 to lower and places in inclined guide surface 30 of bottom surface of tape rubbing table 14, furthermore Hajime makes the introduction inclined surfaces 36b of adhesive surface 36 of sticking head 20.

このとき接着テープ T は、ガイド部材 18 の肩部 34 によって係止され、傾斜案内面 30 及び導入斜面 36b 上に保持される。

また、離型紙 P は、テープ摺動台 14 の水平排出面 26 から装置外部へ延出する。

【0013】

このようにして作業準備が完了した貼付装置 10 を、貼付部位であるフレーム体 F (図 5) をガイド部材 18 が挟持するようにして、フレーム体 F に載せる。

作業者がこの状態で貼付装置 10 をフレーム体 F に押付けると、貼付ヘッド 20 の貼付面 36 の導入斜面 36b 上に配置された接着テープ T の先端部が、導入斜面 36b の下端部によって弾性的にフレーム体 F 上に押圧され、フレーム体 F の平坦部分 F_f に貼付される。

さらに使用者が、貼付装置 10 をフレーム体 F に押付けつつ図 5 の矢印 A 方向へ移動すると、接着テープ T が離型紙 P と共に引っ張られる。

このとき、離型紙 P は一般にシリコンを塗布してあるので比較的腰が強く、故に離型紙貼付接着テープ TP はテープ摺動台 14 の屈曲端部 26a において自動的に離型紙 P と接着テープ T とに分離され(図 4)、離型紙 P のみが図の矢印 B 方向へ排出される。

そして接着テープ T は、テープ摺動台 14 の傾斜案内面 30 を経て貼付ヘッド 20 へ送られる。

接着テープ T の先端部は、貼付ヘッド 20 の導入斜面 36b によってフレーム体 F の平坦部分 F_f に貼付された後、前述のように、貼付装置 10 の移動に従い貼付ヘッド 20 の両側壁 38 によって徐々に両縁部を巻込みつつ、仕上面 36a によってフレーム体 F の曲面部分 F_c に貼付され、それに続いて接着テープ T の全長が、同様にしてフレーム体 F の平坦部分 F_f 及び曲面部分 F_c に正確に貼付される。

接着テープ T は、テープ摺動台 14 上を摺動する間、前述のようにテンションポール 16 によって所定の張力を付与されるので、フレーム体 F へ接着テープ T を貼付する際に、貼付ヘッド 20 の弾性的押圧力によって接着テープ T とフレーム体 F との間から空気が容易かつ確実に排除される。

【0014】

上記の貼付装置 10 は、矩形細長帯形状の接着テープ T を、図 6 に示す自動車ドアの窓枠 W の

This time adhesive tape T is stopped with shoulder part 34 of guide 18, is kept on inclined guide surface 30 and introduction inclined surfaces 36b.

In addition, mold release paper P from horizontal discharge aspect 26 of tape rubbing table 14 extends to device outside.

【0013】

Hajime it makes frame F applicator machine 10 which job preparation completes this way, guide 18 frame F (Figure 5) which is a adhesive site clamping to do.

worker being this state, when applicator machine 10 is pushed to frame F, the tip portion of adhesive tape T which is arranged on introduction inclined surfaces 36b of the adhesive surface 36 of sticking head 20, with bottom end of introduction inclined surfaces 36b in elastic is pressed on frame F, is stuck to flat portion F_f of the frame F.

Furthermore while user, pushing applicator machine 10 to frame F, when it moves to arrow A direction of Figure 5, adhesive tape T is pulled with mold release paper P.

Because this time, as for mold release paper P silicon is done coating fabric generally, body is strong relatively, mold release paper attaching adhesive tape TP is separated with by mold release paper P and adhesive tape T into automatic in reason in bending end 26a of tape rubbing table 14 and (Figure 4), only mold release paper P is discharged to arrow B direction in figure.

And adhesive tape T, passing by inclined guide surface 30 of tape rubbing table 14, is sent to sticking head 20.

tip portion of adhesive tape T, after being stuck to flat portion F_f of frame F with introduction inclined surfaces 36b of sticking head 20, aforementioned way, with both side walls 38 of sticking head 20 gradually while winding, to be stuck both edges by curved surface part amount F_c of frame F with the finished surface 36a in accordance with movement of applicator machine 10, following that, total length of adhesive tape T, It is stuck to flat portion F_f and curved surface part amount F_c of frame F accurately to similar.

Because adhesive tape T while rubbing doing on tape rubbing table 14, the aforementioned way is granted predetermined tension with tension pole 16, when sticking adhesive tape T to frame F, with elastic pushing pressure of sticking head 20 air is removed easily and securely from between adhesive tape T and frame F.

【0014】

Above-mentioned applicator machine 10 rectangular long and narrow seems like the window frame W of automobile door

ような、湾曲形状に延びる貼付部位に貼付することができる。

上記手順に従って、窓枠 W の 1 つの隅部 W1 から湾曲部 W2 方向(矢印 C)へ、接着テープ T を貼付しつつ貼付装置 10 を移動すると、貼付装置 10 はガイド部材 18 の作用によって窓枠 W に沿って案内され、湾曲部 W2 の湾曲形状に自動的に追従する。

貼付装置 10 の移動に従って離型紙 P から剥がされた接着テープ T は、樹脂製であるから、貼付ヘッド 20 によって窓枠 W の湾曲部 W2 に押圧貼付される間に、湾曲部 W2 の外側に配置される部分が長手方向へ容易に伸び、その状態で湾曲部 W2 に正確に貼付される。

このように上記貼付装置 10 によれば、湾曲形状に伸展する貼付部位に接着テープを貼付する場合にも、貼付部位の形状に合わせて予め接着テープを形成する必要がなく、矩形細長帯形状に形成された接着テープを所望の直線又は湾曲部位に貼付することができるので、材料費の削減が可能となる。

【0015】

図 7 は、本発明の第 2 実施例による接着テープ貼付装置 40(以下、貼付装置 40 とする)を示す。

貼付装置 40 は、上記の第 1 実施例による貼付装置 10 にさらに、貼付装置自体を貼付部位に掛止する掛止手段と、貼付部位に対して貼付ヘッドを自動的に圧接させるための付勢手段とを備え、それにより、例えば窓枠の上部フレームの下面側に接着テープを貼付する場合等に、作業者が、貼付装置を貼付部位へ押付ることなく貼付部位に沿って移動させるだけで確実な貼付を可能として、作業性をさらに向上させることを目的としたものである。

【0016】

図 7 に示すように、貼付装置 40 は、ハンドル 42、テープ摺動台 44、ガイド部材 46、貼付ヘッド 48、並びにハンドル 42 及びテープ摺動台 44 を支持する支持壁 50 からなる。

ハンドル 42 は、支持壁 50 の下端に固定され、テープ摺動台 44 に対向する面が凹部 42a を有する段付面として形成される。

which shows adhesive tape T of band configuration, in the Figure 6, it can stick in adhesive site which extends to curved shape.

Following to above-mentioned protocol, while, sticking adhesive tape T from corner W1 of one of window frame W to curved portion W2 direction (arrow C), when it moves applicator machine 10, applicator machine 10 is guided in action of guide 18 alongside window frame W, follows to automatic to curved shape of curved portion W2.

Following to movement of applicator machine 10, because adhesive tape T which is peeled from mold release paper P is resin, while pressure being stuck to the curved portion W2 of window frame W with sticking head 20, portion which is arranged in outside of curved portion W2 extends to longitudinal direction easily, is stuck to curved portion W2 accurately with state.

This way according to above-mentioned applicator machine 10, case adhesive tape is stuck in adhesive site which is extended in curved shape also with, in combination to configuration of adhesive site, it not to be necessary beforehand to form adhesive tape, because rectangular long and narrow the adhesive tape which was formed to band configuration can be stuck in desired straight lines or curved portion rank, reduction of material consumption becomes possible.

【0015】

Figure 7 shows adhesive tape applicator machine 40 (Below, you call applicator machine 40) with second Working Example of this invention.

With above-mentioned first Working Example in applicator machine 10 furthermore, applicator machine itself stopping it designates applicator machine 40, as adhesive site, sticking head is pressed in automatic, vis-a-vis stopping means. adhesive site when has the urging means of for sake of, it sticks adhesive tape in under side of the upper part frame of for example window frame with that, etc, worker, Alongside adhesive site without pushing applicator machine to adhesive site it just moves workability furthermore it improves it is something which is made object with assured sticking as possible.

【0016】

As shown in Figure 7, applicator machine 40 consists of handle 42, tape rubbing table 44, guide 46, sticking head 48, and support wall 50 which supports handle 42 and tape rubbing table 44.

handle 42 is locked by bottom end of support wall 50, is formed as step attaching aspect where surface which opposes to tape rubbing table 44 has the recess 42a.

テープ摺動台 44 は、ハンドル 42 との間に所定の空間を形成して支持壁 50 の側面に固定され、下面に略水平のテープ挿入面 52 を、かつ上面に貼付ヘッド 48 方向へ傾斜したテープ案内面 54 を備える。

また、テープ摺動台 44 の、ハンドル 42 の凹部 42a に対向する部分は、貼付ヘッド 48 を支持する支持部 56 として略水平に突出形成される。

【0017】

ガイド部材 46 は、テープ摺動台 44 の上方延長側壁 44a の上端及びこれに対向する支持壁 50 の上端の各々に固定され、相互に対向するガイド面 58 をそれぞれに備える。

ガイド部材 46 は、好ましくはアクリル等の樹脂材料からなり、貼付作業時に例えば窓枠等のフレーム体を両側から挟持して、貼付部位の伸長形状に追従する貼付装置 40 の移動を可能にする。

さらに各ガイド部材 46 には、貼付装置自体を貼付部位に掛止する掛止手段として、ガイド部材 46 と上方延長側壁 44a 又は支持壁 50 とを側方へ貫通する掛止ピン 60 が設けられる。

掛止ピン 60 は、ガイド部材 46 と上方延長側壁 44a、及びガイド部材 46 と支持壁 50 とを貫通する各貫通孔 62 内で軸線方向へ摺動可能に設置され、貼付作業時には、ガイド部材 46 のガイド面 58 から先端を突出させて、窓枠等に掛合する。

【0018】

貼付ヘッド 48 は、ゴム等の弾性材料からなり、一对の支柱 64 及び圧縮コイルばね 66 を介して、テープ摺動台 44 の支持部 56 によってテープ案内面 54 上端位置に支持される。

貼付ヘッド 48 は、第 1 実施例の貼付ヘッド 20 の貼付面 36 と同様の形状を有する貼付面 68 を備える。

支柱 64 は、テープ摺動台 44 の支持部 56 に設けた貫通孔 70 を摺動可能に貫通し、一端に貼付ヘッド 48 が固定され、他端に掛止環 72 が固定される。

圧縮コイルばね 66 は、貼付ヘッド 48 の下面と支持部 56 の上面との間に、支柱 64 を取巻いて配置され、貼付ヘッド 48 を常に上方へ付勢する。

tape rubbing table 44, forming predetermined space between handle 42, is locked by side surface of support wall 50, tape insertion aspect 52 of approximately horizontal, has tape guide surface 54 which at same time inclines to top to sticking head 48 direction for bottom surface.

In addition, portion which opposes, to recess 42a of handle 42 of the tape rubbing table 44 protruding is formed to approximately horizontal as support portion 56 which supports the sticking head 48.

【0017】

guide 46 top end of upward direction extended sidewall 44a of tape rubbing table 44 and is locked by each of top end of support wall 50 which opposes to this, has guide surface 58 which opposes mutually respectively.

guide 46, it consists of preferably acrylic or other resin material, at time of adhesion work the for example window frame or other frame clamping does from both sides, it makes movement of the applicator machine 40 which follows to decompression configuration of adhesive site possible.

Furthermore in each guide 46, applicator machine itself stopping is designated as the adhesive site, guide 46 and upward direction extended sidewall 44a or support wall 50 are penetrated to side direction can provide stopping pin 60 as stopping means.

Stopping pin 60 guide 46 and upward direction extended sidewall 44a, and inside each hole 62 which penetrates guide 46 and support wall 50 to axial direction is installed in slidable, at time of adhesion work, protruding doing the end from guide surface 58 of guide 46, Kakeya makes window frame etc.

【0018】

Sticking head 48 consists of rubber or other elastic material, through pole 64 and the compressed coil spring 66 of pair, with support portion 56 of tape rubbing table 44 is supported in the tape guide surface 54 upper end position.

Sticking head 48 has adhesive surface 68 which possesses configuration which is similar to adhesive surface 36 of sticking head 20 of first Working Example.

pole 64 penetrates hole 70 which is provided in support portion 56 of the tape rubbing table 44 to slidable, sticking head 48 is locked by one end, stopping ring 72 is locked to other end.

compressed coil spring 66 is arranged, in bottom surface of sticking head 48 and between top of support portion 56, taking winding pole 64, energization does sticking head 48 always to upward direction.

したがって圧縮コイルばね 66 は、貼付作業時に貼付部位に対して貼付ヘッド 48 を自動的に圧接させるための付勢手段として作用する。

[0019]

上記の貼付装置 40 の作用を以下に説明する。

図 8 に示すように、まず矩形細長帯形状の離型紙付接着テープ TP を、貼付装置 40 の側方からテープ摺動台 44 とハンドル 42 との間隙に遊挿する(矢印 D)。

このとき、テープ摺動台 44 の下面(テープ挿入面 52)及びハンドル 42 の上面には突出部分が全く無いので、図 1 の貼付装置 10 に比べて離型紙付接着テープ TP の挿入が容易である。

次いで離型紙付接着テープ TP の先端を離型紙 P と接着テープ T とに分離し、接着テープ T のみをテープ摺動台 44 のテープ挿入面 52 の屈曲端部 52a から上方へ巻込んでテープ案内面 54 に載せ、テープ先端を貼付ヘッド 48 の貼付面 68 上に配置する。

このようにして作業準備が完了した貼付装置 40 を、窓枠等のフレーム体 F(図 8)に装着する。

このときまず、ガイド部材 46 に設けた掛止ピン 60 をガイド面 58 から引込めた状態で、各ガイド部材 46 がフレーム体 F を挟持するように貼付装置 40 をフレーム体 F に嵌合させる(図 8(a))。

次いで、貼付装置 40 をフレーム体 F に押付けて、貼付ヘッド 48 を圧縮コイルばね 66 の付勢に抗してハンドル 42 方向へ押込み、貼付面 68 をフレーム体 F に圧接させる。

貼付ヘッド 48 を所定距離だけ押込んだ後、掛止ピン 60 の先端をガイド面 58 から突出させ、フレーム体 F の肩部に掛合させる(図 8(b))。

この状態で貼付ヘッド 48 の貼付面 68 は、圧縮コイルばね 66 の付勢によってフレーム体 F に圧接されており、作業者が作業中にハンドル 42 から手を離しても、この圧接状態が維持される。

したがって作業者は、貼付装置 40 をフレーム体 F に沿って移動させるだけで、第 1 実施例の貼付装置 10 と同様にして、多様な形状のフレーム体 F に対して接着テープ T を確実に貼付することができる。

Therefore as for compressed coil spring 66, at time of adhesion work sticking head 48 is pressed in automatic, vis-a-vis adhesive site it operates as urging means of for sake of.

[0019]

Action of above-mentioned applicator machine 40 is explained below.

As shown in Figure 8, first rectangular long and narrow mold release paper attaching adhesive tape TP of band configuration, from side direction of applicator machine 40 is inserted in gap of tape rubbing table 44 and handle 42 (arrow D).

Because this time, bottom surface of tape rubbing table 44 (tape insertion aspect 52) or completely there is not a protruding portion in top of handle 42, insertion of mold release paper attaching adhesive tape TP is easy in comparison with applicator machine 10 of Figure 1.

Next, end of mold release paper attaching adhesive tape TP is separated with into mold release paper P and adhesive tape T, only adhesive tape T involves from bending end 52a of tape insertion aspect 52 of tape rubbing table 44 to upward direction and places in the tape guide surface 54, arranges tape end on adhesive surface 68 of sticking head 48.

applicator machine 40 which job preparation completes this way, is mounted in the window frame or other frame F (Figure 8).

This time first, it provided in guide 46, in order stopping pin 60 pulling with state which is included, for each guide 46 clamping todo frame F from guide surface 58, applicator machine 40 you engage to frame F (Figure 8 (a)).

Next, pushing applicator machine 40 to frame F, sticking head 48 resist to the energization of compressed coil spring 66, to handle 42 direction you press pushing in and adhesive surface 68 in frame F, する。

After just specified distance pushing in sticking head 48, protruding doing end of stopping pin 60 from guide surface 58, Kakeya it makes shoulder part of frame F, (Figure 8 (b)).

With this state adhesive surface 68 of sticking head 48 with energization of compressed coil spring 66 is pressed in frame F, worker releases hand from handle 42 while job, this press contact state is maintained.

Therefore worker, applicator machine 40 alongside frame F just moves, the adhesive tape T can be stuck securely to similar to applicator machine 10 of first Working Example, vis-a-vis frame F of diverse configuration.

また、貼付作業中は、上記のように押込められた貼付ヘッド 48 の支柱 64 が、その他端の掛止環 72 を支持部 56 の下面(テープ挿入面 52)から突出させる(図 8(b))。

突出した掛止環 72 は、図 9 に示すように、離型紙付接着テープ TP を撓曲してハンドル 42 の凹部 42a 内に変位させ、それにより接着テープ T に所定の張力を付与する。

したがって本実施例では、第 1 実施例におけるテンションポール 16 が省略されている。

【0020】

【発明の効果】

以上の説明から明らかなように、本発明によれば、貼付作業中に離型紙付接着テープを自動的に離型紙と接着テープとに分離し、フレーム体に沿って貼付装置を移動させる 1 回の貼付動作のみで、多様な表面形状及び伸長形状を有するフレーム体の表面に、接着テープを迅速かつ正確に貼付することができる。

また、接着テープ自体の伸縮性を利用するので、貼付部位の形状に合わせた接着テープの事前成形が不要となる。

したがって、貼付精度を低下させることなく貼付作業における材料費及び作業時間を大幅に削減することができる。

【図面の簡単な説明】

【図 1】

本発明の第 1 実施例による接着テープ貼付装置の斜視図である。

【図 2】

図 1 の接着テープ貼付装置の、(a)側面図、(b)矢印 b 方向から見た立面図、(c)矢印 c 方向から見た立面図、である。

【図 3】

図 1 の接着テープ貼付装置の貼付ヘッドの、(a)底面図、(b)矢印 b 方向から見た立面図、である。

【図 4】

図 1 の接着テープ貼付装置の断面図で、接着テープを準備位置に配置した状態を示す。

【図 5】

In addition, in adhesion work, as description above pole 64 of the sticking head 48 which was pushed in, protruding does stopping ring 72 of other end from bottom surface (tape insertion aspect 52) of support portion 56, (Figure 8 (b)).

protruding it did, stopping ring 72, as shown in Figure 9, bending doing mold release paper attaching adhesive tape TP, displacement making inside recess 42a of handle 42, grants predetermined tension to adhesive tape T with that.

Therefore with this working example, tension pole 16 in first Working Example is abbreviated.

【0020】

[Effects of the Invention]

As been clear from explanation above, according to this invention, in the adhesion work mold release paper attaching adhesive tape is separated with into mold release paper and adhesive tape in automatic, with only sticking operation of one time which moves applicator machine alongside frame, in surface of frame which possesses diverse surface profile and decompression configuration, can stick adhesive tape quickly and accurately.

In addition, because stretchability of adhesive tape itself is utilized, thing preformation shape of adhesive tape which is adjusted to configuration of the adhesive site becomes unnecessary.

Therefore, sticking precision material consumption and work time in adhesion work without decreasing can be reduced greatly.

[Brief Explanation of the Drawing(s)]

[Figure 1]

It is a oblique view of adhesive tape applicator machine with first Working Example of this invention.

[Figure 2]

Elevation which was seen, from (a) side view, (b) arrow b direction of adhesive tape applicator machine of Figure 1 and elevation which was seen from (c) arrow c direction, is.

[Figure 3]

Elevation which was seen, from (a) bottom view, (b) arrow b direction of sticking head of adhesive tape applicator machine of Figure 1, is.

[Figure 4]

With sectional view of adhesive tape applicator machine of Figure 1, state which arranges the adhesive tape in preparatory position is shown.

[Figure 5]

図 1 の接着テープ貼付装置の作業状態を示す斜視図である。

【図6】

図 1 の接着テープ貼付装置の適用例を示す図である。

【図7】

本発明の第 2 実施例による接着テープ貼付装置の、2 方向から見た斜視図である。

【図8】

図 7 の接着テープ貼付装置の矢印 VIII 方向から見た立面図で、(a)貼付作業開始直前、(b)作業実施中、の各状態を示す。

【図9】

図 7 の接着テープ貼付装置の作業実施中の状態を示す断面図である。

【符号の説明】

10

接着テープ貼付装置

12

ハンドル

14

テープ摺動台

16

テンションポール

18

ガイド部材

20

貼付ヘッド

22

支持壁

24

水平進入面

26

水平排出面

26a

It is a oblique view which shows job state of adhesive tape applicator machine of Figure 1.

[Figure 6]

It is a figure which shows use example of adhesive tape applicator machine of Figure 1.

[Figure 7]

It is a oblique view which was seen, from 2 directions of adhesive tape applicator machine with the second Working Example of this invention.

[Figure 8]

In elevation which was seen from arrow VIII direction of adhesive tape applicator machine of Figure 7, immediately before (a) adhesion work starting and during (b) workperformance, each state is shown.

[Figure 9]

It is a sectional view which shows state which is in midst of workperformance of adhesive tape applicator machine of Figure 7.

[Explanation of Symbols in Drawings]

10

adhesive tape applicator machine

12

handle

14

tape rubbing table

16

tension pole

18

guide

20

Sticking head

22

support wall

24

horizontal penetration surface

26

horizontal discharge surface

26 a

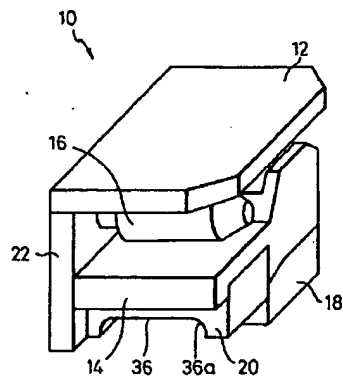
屈曲端部	bending end
30	30
傾斜案内面	Inclined guide surface
32	32
ガイド面	guide surface
36	36
貼付面	adhesive surface
40	40
接着テープ貼付装置	adhesive tape applicator machine
42	42
ハンドル	handle
42a	42 a
凹部	recess
44	44
テープ摺動台	tape rubbing table
46	46
ガイド部材	guide
48	48
貼付ヘッド	Sticking head
50	50
支持壁	support wall
52a	52 a
屈曲端部	bending end
54	54
傾斜案内面	Inclined guide surface
58	58
ガイド面	guide surface
60	60
掛止ピン	Stopping pin
64	64
支柱	pole
66	66
圧縮コイルばね	compressed coil spring
68	68
貼付面	adhesive surface

Drawings

【図1】

[Figure 1]

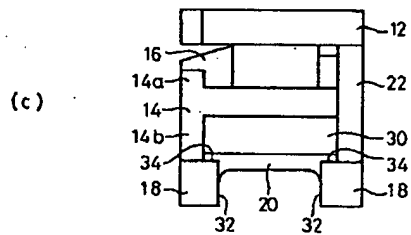
接着テープ貼付装置の斜視図



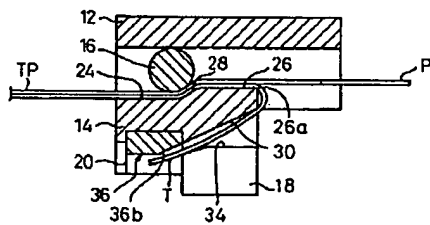
- 12…ハンドル
- 14…テープ巻動台
- 16…テンションボール
- 18…ガイド部材
- 20…貼付ヘッド
- 22…支持壁
- 36…貼付面

【図2】

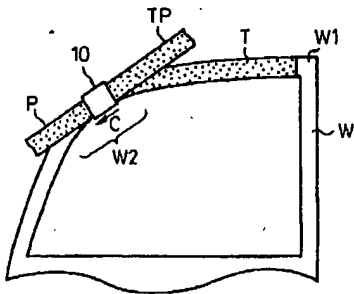
[Figure 2]



[Figure 4]

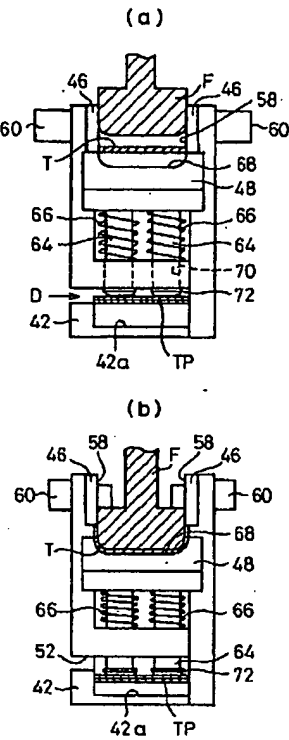


[Figure 6]



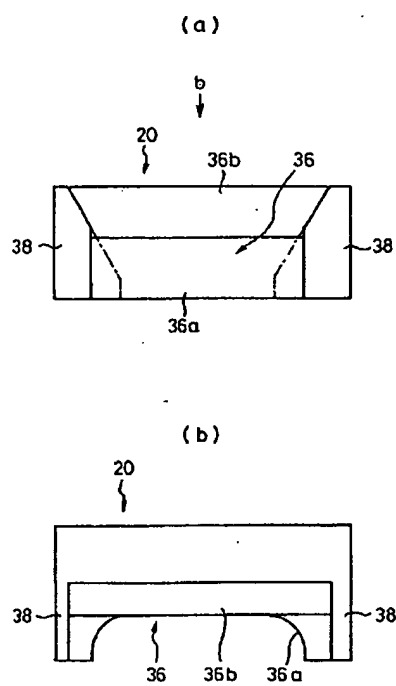
【図8】

[Figure 8]

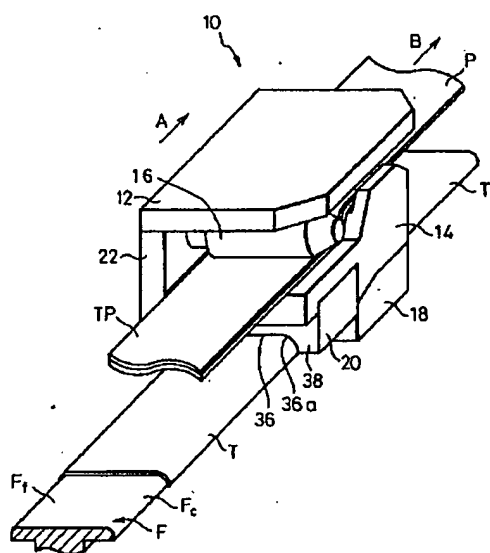


【図3】

[Figure 3]



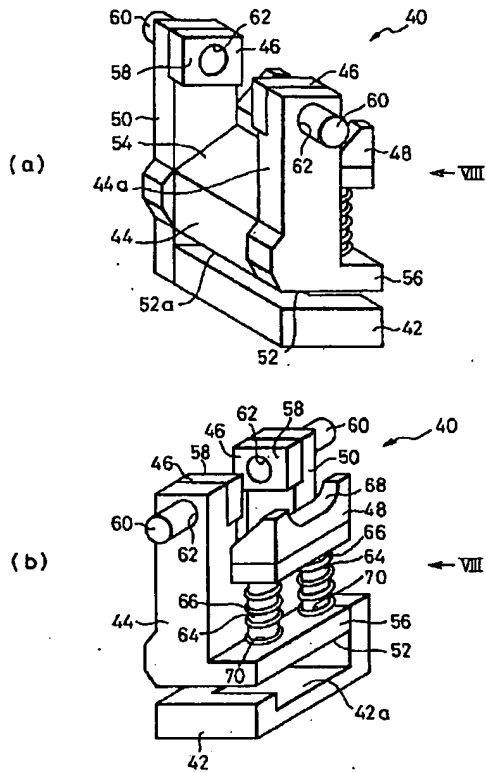
【図5】



【圖7】

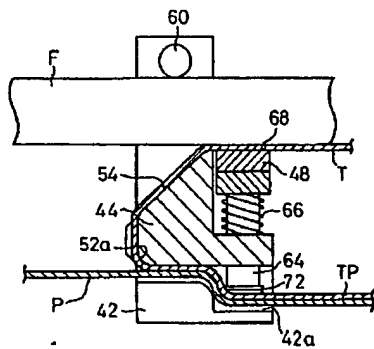
[Figure 5]

[Figure 7]



【図9】

[Figure 9]



said applying head at both end positions of said applying head, respectively, including a guide surface holding the frame therebetween, and enabling said applying head to follow and move along an elongated form of the frame, and

a tensioning means applying a prescribed tension to the adhesive tape of a resin material moving in said tape path means.

[Claim 2] A device for applying an adhesive tape according to claim 1, wherein said applying head includes a means for biasing said applying head toward said applying surface and is retractably supported by said tape sliding block, and said guide means includes a means for hooking said device for applying an adhesive tape on an operating position against the bias force of said biasing means and maintaining a pressure contact condition between said applying surface of said applying head and the surface of the frame during an applying operation of the adhesive tape.

[DETAILED DESCRIPTION OF THE INVENTION]

[0001]

[Field of Utilization in Industry]

The present invention relates to a device for applying an adhesive tape, and particularly to a device for applying an adhesive tape usable as a device for adhering a single-coated adhesive resin film in tape form to a frame, such as a window frame of a car body, for ornamental purposes.

[0002]

[Prior Art]

Window frames of doors of a car body that are externally visible are usually painted black mainly for

ornamental purposes. Painting these parts has been replaced by adhering adhesive resin film in tape form in recent years, in order to eliminate the negative effects to the environments by painting. In a generally-adopted film adhesion procedure, large single-coated adhesive resin film is stamped out to produce a film tape having the same shape as a window frame or other application region. The film tape is then adhered manually using an application tool. According to this procedure, first, release paper attached on the adhesive surface of the film tape is peeled off; the film tape is then visually positioned in the application region, and adhered gradually from its end while air is removed using a spatula-shaped application tool. When the tape is adhered on a window frame or other curved region having a cross section including curved edges, the center of the film tape is first adhered to the flat center portion of the frame as mentioned above, then both edges of the film tape are curved according to the curved areas of the window frame while air is removed. In this case, to reliably adhere both edges of the film tape to the curved areas, when the center of the film tape is adhered, the film tape must be precisely positioned in the application region.

[0003]

[Problems to be Solved by Invention]

The foregoing process of adhering a single-coated adhesive film tape manually requires professional handling in the stage of film positioning. Further, since the spatula-shaped application tool usually having a linear distal end is used when the cross section of the applied region has a curved area, adhering one strip of tape while removing air in the longitudinal direction of the tape must be repeated several times, which is very

time-consuming. Moreover a large single-coated adhesive resin film must be previously stamped out to produce a film tape having the same shape as an intended application region, thus increasing material cost.

[0004]

The object of the present invention is to provide a device for applying an adhesive tape that is easy to use, permits reliable and quick film adhesion, obviates preliminary production of adhesive film tape having the same shape as an intended application region, and reduces material cost and work hours.

[0005]

[Means for Solving the Problems]

To achieve the above object, the present invention provides a device for applying an adhesive tape to a surface of a frame, comprising a supporting member including a gripped portion; a tape sliding block fixed on the supporting member; a tape path means including an entering path of an adhesive tape of a resin material with a release paper formed at one side of the tape sliding block, a guiding path of the adhesive tape of a resin material removed the release paper formed at an opposite side to the entering path about the tape sliding block, and a discharging path of the release paper formed by a bent wall of the tape sliding block between the entering path and the guiding path; an applying head arranged at an end position of the guiding path of the tape path means, having an applying surface including a surface section, a profile of which is substantially the same as a surface of the frame, and supported by the tape sliding block; the applying head being made of an elastic material in at least a portion including the applying surface, and thus the adhesive tape of a resin material

being press fitted to the surface of the frame; guide means fixedly arranged adjacent to the applying head at both end positions of the applying head, respectively, including a guide surface holding the frame therebetween, and enabling the applying head to follow and move along an elongated form of the frame; and a tensioning means applying a prescribed tension to the adhesive tape of a resin material moving in the tape path means.

[0006]

According to a preferred embodiment, the applying head may include a means for biasing the applying head toward the applying surface and may be retractably supported by the tape sliding block, and the guide means may include a means for hooking the device for applying an adhesive tape on an operating position against the bias force of the biasing means and maintaining a pressure contact condition between the applying surface of the applying head and the surface of the frame during an applying operation of the adhesive tape.

[0007]

[Mode of Operation]

An adhesive tape with release paper is placed at an entering path of a tape path means, and then separated into a release paper and an adhesive tape at its tip. Then, only the adhesive tape is bent along a bent wall of a tape sliding block, and arranged on an applying surface of an applying head via a guiding path. In this state, the tip of the adhesive tape is further pulled, and thus the release paper automatically departs from the adhesive tape at the bent wall of the tape sliding block, and is discharged through a discharging path. Next, the device for applying an adhesive tape is mounted on a frame so that the guide surface of guide means holds the frame,

and the tip of the adhesive tape is pressed and adhered onto the frame by the applying surface of the applying head. In this state, an operator holds a gripped portion of a supporting member, and presses the application head onto the frame while moving the device in the extending direction of the frame. Thus, the device moves and follows the elongated shape of the frame by the function of the guide means, and the adhesive tape with the release paper automatically removed is reliably adhered to the frame according to the shape of the surface of the frame by the applying head. An adhesive resin tape can be stretched in the longitudinal direction to some extent, therefore, a rectangular strip-like adhesive tape can be adhered to a frame having a curved and elongated shape.

[0008]

[Embodiments]

The present invention will be described in more detail in conjunction with preferred embodiments shown in the appended drawings.

Referring to Figure 1, a device 10 for applying an adhesive tape (hereafter, referred to as an application device 10) according to the first embodiment of the present invention has a handle 12, a tape sliding block 14, a tension pole 16, guide members 18, an applying head 20, and a supporting wall 22 for supporting the handle 12 and the tape sliding block 14. The handle 12 is fixed as a grip portion on the upper end of the supporting wall 22 serving as a supporting means, and is shaped in such a manner that a user can easily hold the same with one hand. The tape sliding block 14 is distanced by a given space from the handle 12 and fixed on the side of the supporting wall 22. The tape sliding

block 14 has, as indicated with solid and dashed lines in Figure 2a or shown in the cross-section of Fig. 4, on the upper side thereof, a horizontal entering surface 24 forming a sliding entering path for an adhesive resin film tape with release paper (hereafter, referred to as an adhesive tape), a horizontal discharging surface 26 located higher than the horizontal entering surface 24 and forming a sliding discharge path for a release paper, and an inclined connecting surface 28 for mutually connecting the horizontal entering surface 24 and the horizontal discharging surface 26, and on the lower side thereof, an inclined guide surface 30 inclined downward from a bent edge 26a of the horizontal discharging surface 26 of the upper side toward the applying head 20 and forming a sliding guide path for the adhesive tape with the release paper removed. The horizontal discharging surface 26 of the upper side and the inclined guide surface 30 of the lower side have their sides limited by extended side walls 14a and 14b of the tape sliding block 14 and the supporting wall 22, thus forming a tape path slightly wider than the width of the adhesive tape.

[0009]

A tension pole 16 is fixed on the side of a supporting wall 22 between a handle 12 and a tape sliding block 14. The lower end of the tension pole 16 is located lower than a horizontal discharging surface 26 of the upper side of the tape sliding block 14, and is distanced by a given gap for loosely inserting the adhesive tape with release paper from horizontal entering surface 24 and an inclined connecting surface 28. The tension pole 16 applies a given tension to the adhesive tape when the adhesive tape is pulled towards the horizontal discharging surface 26.

[0010]

Guide members 18 are fixed on the lower end of the extended side wall 14b in a lower part of the tape sliding block 14 and to the lower end of the supporting wall 22 opposing the extended side wall 14b, having mutually-opposing guide surfaces 32 (see Figs. 2b and 2c). The guide surfaces 32 are, as shown in Fig. 2c, projecting slightly inward of the inner surfaces of the extended side wall 14b and the supporting wall 22, thus forming shoulders 34 opposing the inclined guide surface 30 of the tape sliding block 14. The guide members 18 hold a window frame or other frame at both sides thereof by the guide surfaces 32 during an applying operation. This enables an application device 10 to move according to the elongated shape of the frame. Therefore, the guide members 18 are preferably made of acrylic or other resin so as not to damage the application region.

[0011]

An applying head 20 is made of rubber or other elastic material and fixed below the horizontal entering surface 24 of the tape sliding block 14. On the bottom of the applying head 20, an application surface 36 is formed to communicate with the inclined guide surface 30 of the lower side of the tape sliding block 14. The application surface 36 concentrically receives pressure from an operator during an applying operation, and presses the reverse side of the adhesive tape elastically so that the adhesive tape will reliably adhere to the surface of a frame. On the application surface 36, as shown in Figs. 1 and 2b, a finishing surface 36a, which has substantially the same shape as the cross section of an application region and a width smaller than the whole width of the adhesive tape, is formed at an exit side of

the adhesive tape, and an inclined introduction surface 36b, that is flat and slightly wider than the whole width of the adhesive tape, is formed at an entry side of the adhesive tape, i.e., a side communicating with the inclined guide surface 30 of the tape sliding block 14. In the interval between the inclined introduction surface 36b and the finishing surface 36a, the application surface 36 is tapered by side walls 38 projecting downward of the applying head 20. Therefore, during an applying operation, the adhesive tape fed from the tape sliding block 14 to the applying head 20 is first adhered to a flat portion of an application region by the inclined introduction surface 36b (or more strictly, the lower end of the inclined introduction surface 36b). The edges of the adhesive tape and then gradually curved by the side walls 38 following the movement of the application head 20, while being adhered to the curved areas of the application region by the finishing surface 36a.

[0012]

The operations of the application device 10 will be described. As shown in Fig. 4, a rectangular strip-like adhesive tape with release paper TP, that is stamped out from a large single-sided adhesive resin film, is inserted from the side of the application device 10 to the gap between a tape sliding block 14 and a tension pole 16, and then placed on a horizontal entering surface 24, an inclined connecting surface 28, and a horizontal discharging surface 26 of the upper side of the tape sliding block 14. Next, the tip of the adhesive tape with release paper TP is separated into release paper P and an adhesive tape T. Only the adhesive tape T is curved downward at a bent edge 26a of the horizontal discharging surface 26, placed along an inclined guide

surface 30 of the lower side of the tape sliding block 14, and set on an inclined introduction surface 36b of an application surface 36 of an applying head 20. At this time, the adhesive tape T is stopped by shoulders 34 of guiding members 18 and thus held on the inclined guide surface 30 and the inclined introduction surface 36b. The release paper P goes out of the application device through a horizontal discharging surface 26 of the tape sliding block 14.

[0013]

Thus, the application device 10 is ready to operate. The application device 10 is mounted on a frame F or an application region so that the guiding members 18 hold the frame F (Fig. 5) therebetween. When an operator presses the application device 10 onto the frame F, the tip of the adhesive tape T arranged on the inclined introduction surface 36b of the application surface 36 of the applying head 20 is pressed on the frame F elastically by the lower end of the inclined introduction surface 36b, and then adhered to a flat portion F_f of the frame F. When the user further presses the application device 10 to the frame F while moving the application device 10 in the direction of an arrow A in Fig. 5, the adhesive tape T is pulled together with the release paper P. The release paper P is usually relatively rigid because of silicon coating. Therefore, an adhesive tape with release paper TP is automatically separated into release paper P and the adhesive tape T at the bent edge 26a of the tape sliding block 14 (Fig. 4). Only the release paper P is discharged in the direction of an arrow B in Fig. 5. The adhesive tape T is then fed to the applying head 20 via the inclined guide surface 30 of the tape sliding block 14. The tip of the adhesive tape T is adhered to the flat portion F_f of the frame F

by the inclined introduction surface 36b of the applying head 20. Then, as described above, the edges of the adhesive tape T are gradually curved by the side walls 38 of the applying head 20 by the movement of the application device 10, and then adhered to the curved areas F_c of the frame F by the finishing surface 36a. The entire length of the adhesive tape T is then adhered reliably to the flat portion F_f and curved areas F_c of the frame F. The adhesive tape T is subjected to a predetermined tension of a tension pole 16, as described above, while sliding on the tape sliding block 14. Therefore, when the adhesive tape T is adhered to the frame F, air is removed effortlessly and reliably from the gap between the adhesive tape T and the frame F due to the elastic pressing force of the applying head 20.

[0014]

The application device 10 can adhere the rectangular strip-like adhesive tape T to a window frame W of a car door or other application region extending in a curved manner as shown in Fig. 6. According to the aforesaid procedure, when the application device 10 is moved to adhere the adhesive tape T from a corner W1 of the window frame W towards a curved portion W2 (in the arrow C direction), the application device 10 is guided along the window frame W by means of guiding members 18 thereby automatically following the shape of the curved portion W2. Because the adhesive tape T parted from release paper P according to the movement of the application device 10 is made of resin, the portion of the adhesive tape T to be arranged on the outer sides of the curved portion W2 can be easily stretched in the longitudinal direction thereof and thus, in such a condition, the adhesive tape T is reliably adhered to the curved portion W2, while the adhesive tape T is pressed

and adhered to the curved portion W2 of the window frame W by the application head 20. Thus, by using the aforesaid application device 10, even when an adhesive tape is adhered to an application region extending in a curved manner, the adhesive tape need not be previously formed to have the same shape as an application region, and thus an adhesive tape formed as a rectangular strip can be adhered to any intended linear or curved region, which reduces material cost.

[0015]

Fig. 7 shows an application device 40 according to the second embodiment of the present invention. The application device 40 includes a hooking means for hooking the application device to an application region and a biasing means for bringing an applying head into contact with the application region, in addition to the components of the application device 10 of the first embodiment. Thereby, for example, when adhesive tape is adhered to the bottom side of an upper frame of a window frame, an operator need not press the application device to the application region, and when the operator merely moves the application device along the application region, the adhesive tape is adhered reliably. Thus, the second embodiment helps further improve operability.

[0016]

As shown in Fig. 7, the application device 40 comprises a handle 42, a tape sliding block 44, guide members 46, an applying head 48, and a supporting wall 50 for supporting the handle 42 and the tape sliding block 44. The handle 42 is fixed to the lower end of the supporting wall 50 and has a stepped surface opposing the tape sliding block 44 and including a recess 42a. The tape sliding block 44 is placed a given distance from the

handle 42, and fixed to the side of the supporting wall 50. A substantially horizontal tape insertion surface 52 is formed on the lower side of the tape sliding block 44, and a tape guide plane 54 inclined towards the applying head 48 on the upper side thereof. A portion of the tape sliding block 44 opposing the recess 42a of the handle 42 projects substantially horizontally as a support 56 for supporting the applying head 48.

[0017]

Guide members 46 are fixed to the upper end of an upper extended side wall 44a of the tape sliding block 44 and to the upper end of a supporting wall 50 opposing the side wall 44a, and have mutually-opposing guide surfaces 58. The guide members 46 are preferably made of acrylic or other resin. During an applying operation, the guide members 46 hold a window frame or other frame therebetween so that the application device 40 can move according to the elongated shape of an application region. Each of the guide members 46 has a hook pin 60 serving as a hooking means for hooking the application device at an application region and penetrating laterally through the guide member 46 and the upper extended side wall 44a or supporting wall 50. The hook pin 60 lies in a through hole 62 penetrating through the guide member 46 and the upper extended side wall 44a or supporting wall 50 so that the stopper 60 can slide freely in the axial direction. During an applying operation, the tips of the hook pins 60 come out of the guide surfaces 58 to engage with a window frame.

[0018]

An applying head 48 is made of rubber or other elastic material and held at the upper end of a tape

guide surface 54 via a pair of columns 64 and compression coil springs 66 by a support 56 of a tape sliding block 44. The applying head 48 has an application surface 68 having the same shape as the application surface 36 of the applying head 20 of the first embodiment. The columns 64 lie in through holes 70 formed on the support 56 of the tape sliding block 44. The applying head 48 is fixed at one end of each of the columns 64, and stopper rings 72 are fixed at other ends of the columns 64. The compression coil springs 66 are wound around the columns 64 between the bottom of the applying head 48 and the top of the support 56, and press the applying head 48 upward constantly. Therefore, the compression coil springs 66 serve as biasing means for automatically bringing the applying head 48 into contact with an application region during an applying operation.

[0019]

The operations of the application device 40 will be described. As shown in Fig. 8, a rectangular strip-like adhesive tape with release paper TP is inserted from the side of the application device 40 to the gap between a tape sliding block 44 and a handle 42 (in an arrow D direction). The bottom surface of the tape sliding block 44 (tape insertion surface 52) and the top surface of the handle 42 have no projection, therefore, compared to the application device 10 shown in Fig. 1, the adhesive tape with release paper TP can be more smoothly inserted. Next, the tip of the adhesive tape with release paper TP is separated into a release paper P and an adhesive tape T. Only the adhesive tape T is curved upward at a bent edge 52a of a tape insertion surface 52, set on a tape guide surface 54, and arranged on an application surface 68 of an applying head 48. In this manner, the application device 40 is ready to operate,

and then is mounted on a window frame or other frame F (Fig. 8). In this case, the hook pins 60 of guide members 46 retreat from guide surfaces 58, while the application device 40 is engaged with the frame F so that the guide members 46 hold the frame F therebetween (Fig. 8a). Next, the application device 40 is pressed onto the frame F so that the applying head 48 will be pushed down towards the handle 42 against the biasing force of compression coil springs 66, which brings an application surface 68 into contact with the frame F. After the applying head 48 is pushed down a given distance, the tips of the hook pins 60 are projected from the guide surfaces 58 to engage with the shoulders of the frame F (Fig. 8b). At this time, the application surface 68 of the applying head 48 is in close contact with the frame F due to the pressure of the compression coil springs 66. Even when the operator releases the handle 42 during an operation, the contact state is retained. Thus, an operator can reliably adhere adhesive tape T to a frame F having a variable shape merely by moving the application device 40 along the frame F, the same way as the application device 10. During an applying operation, the columns 64 of the applying head 48, that are pushed down as described above, cause the stopper rings 72 at other ends of the columns 64 to project from the bottom of the support 56 (i.e., tape insertion surface 52) (Fig. 8b). The projecting stopper rings 72 bend an adhesive tape with release paper TP and displace it into a recess 42a of the handle 42, which applies a given tension to the adhesive tape T. Therefore, in this embodiment, a tension pole 16 of the first embodiment can be omitted.

[0020]

[Effect of Invention]

As is apparent from the above description, according to the present invention, an adhesive tape with release paper is automatically separated into a release paper and an adhesive tape during an applying operation, and only by a single application operation for moving an application device along a frame, can an adhesive tape be quickly and reliably adhered to the surface of the elongated frame having a variable surface shape. Since the elasticity of adhesive tape is utilized, adhesive tape need not be formed in advance to have the same shape as an application region. This minimizes the material cost and work hours required for application without deteriorating adhesion precision.

[BRIEF EXPLANATION OF THE DRAWINGS]

[Figure 1]

A respective view of a device for applying an adhesive tape according to the first embodiment of the present invention.

[Figure 2]

An illustration of the device shown in Figure 1; (a) a side view; (b) an elevation view shown from an arrow b; and (c) an elevation view shown from an arrow c.

[Figure 3]

An illustration of the applying head of the device shown in Figure 1; (a) a bottom view; and (b) an elevation view shown from an arrow b.

[Figure 4]

A cross-sectional view of the device of Figure 1 in such a state that an adhesive tape is placed at a ready position.

[Figure 5]

A perspective view showing the operating state of the device shown in Figure 1.

[Figure 6]

An illustration showing an application of the device of Figure 1.

[Figure 7]

Perspective views in two different directions of a device for applying an adhesive tape according to the second embodiment of the present invention.

[Figure 8]

An elevation view of the device of Figure 7 shown from the arrow VIII; (a) before the start of an applying operation; and (b) during an applying operation.

[Figure 9]

A cross-sectional view showing a operating state of the device of Figure 7.

[DESCRIPTION OF REFERENCE NUMERALS]

10, 40: device for applying an adhesive tape

12, 42: handle

14, 44: tape sliding block

16: tension pole

18, 46: guide member

20, 48: applying head

22, 50: supporting wall

24: horizontal entering surface

26: horizontal discharging surface

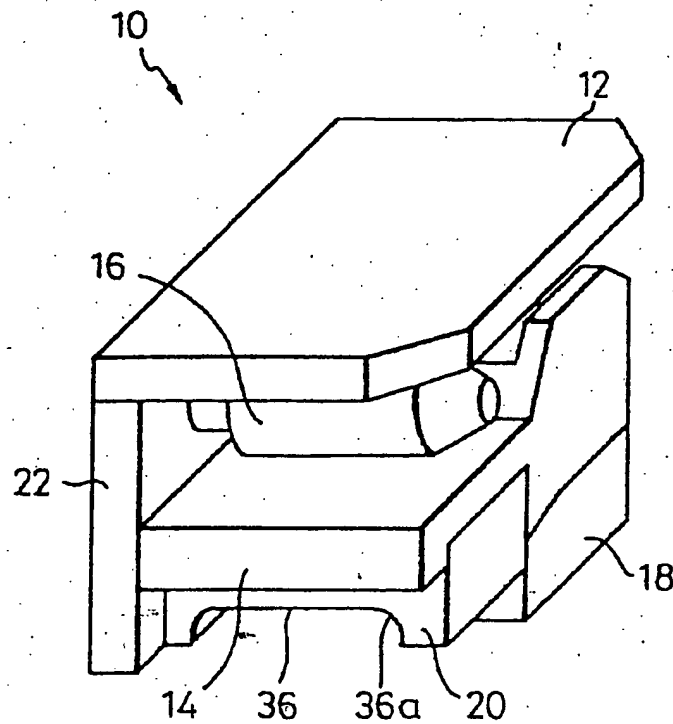
26a, 52a: bent edge

30, 54: inclined guide surface

32, 58: guide surface

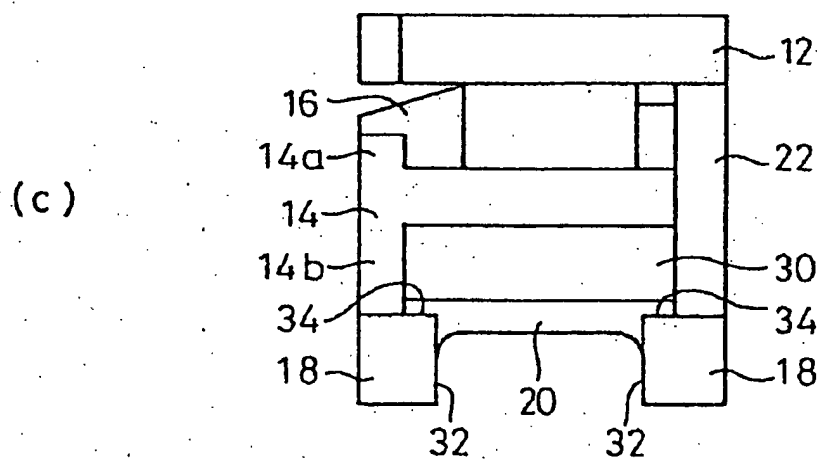
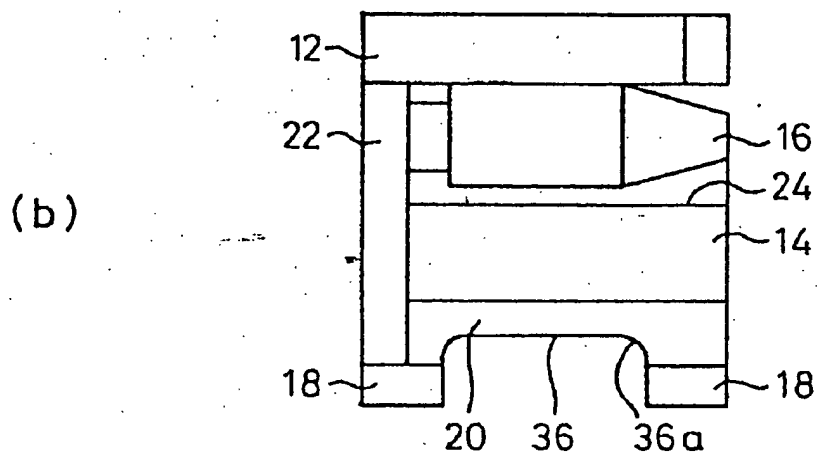
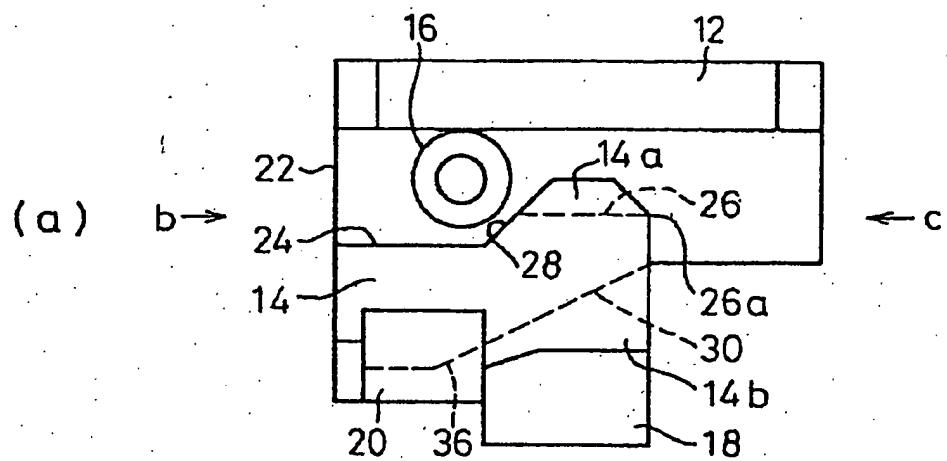
36, 68: application surface
42a: recess
60: hook pin
64: column
66: compression coil spring

Perspective view of a device for applying an adhesive

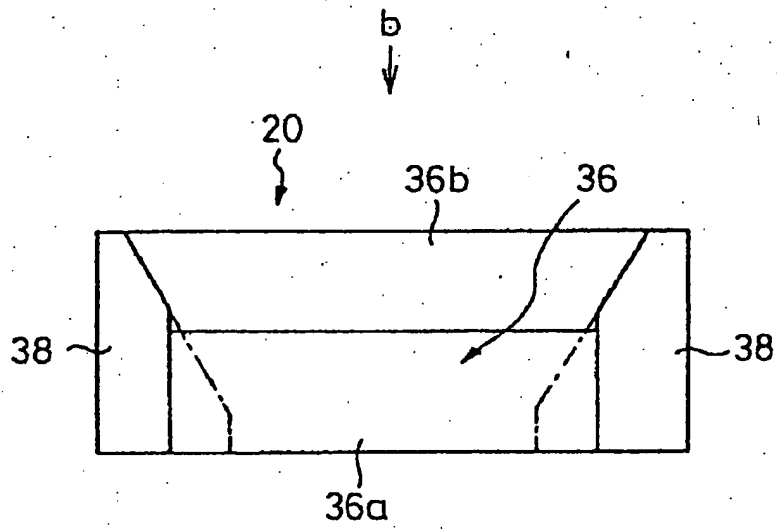


- 12... handle
- 14... tape sliding block
- 16... tension pole
- 18... guide member
- 20... applying head
- 22... support wall
- 36... applying surface

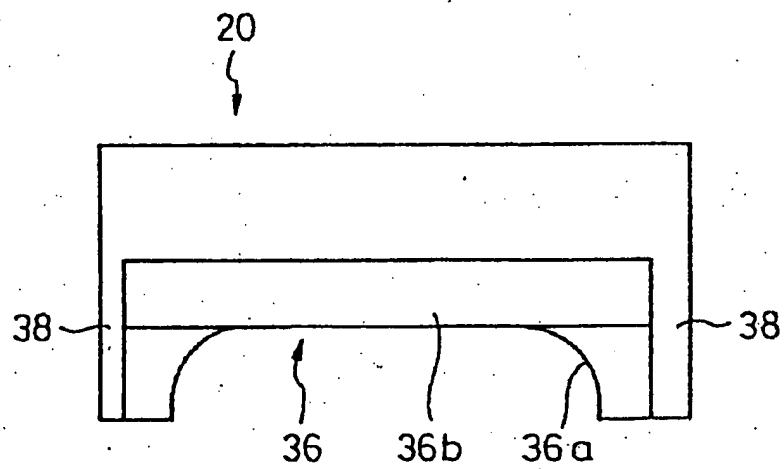
【図2】

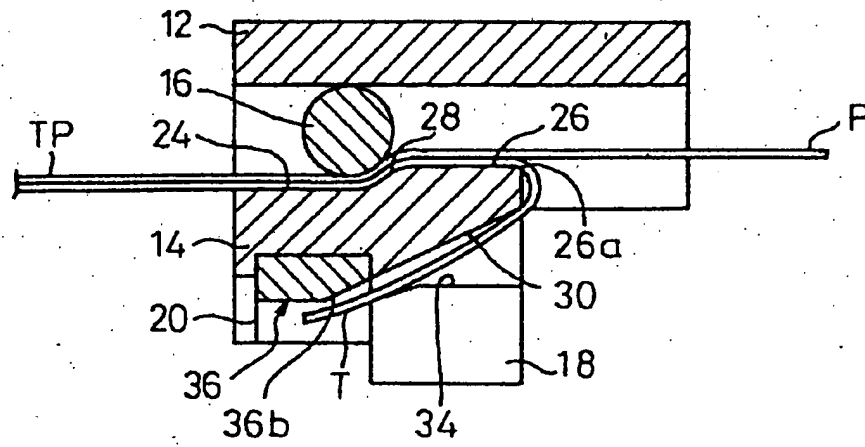


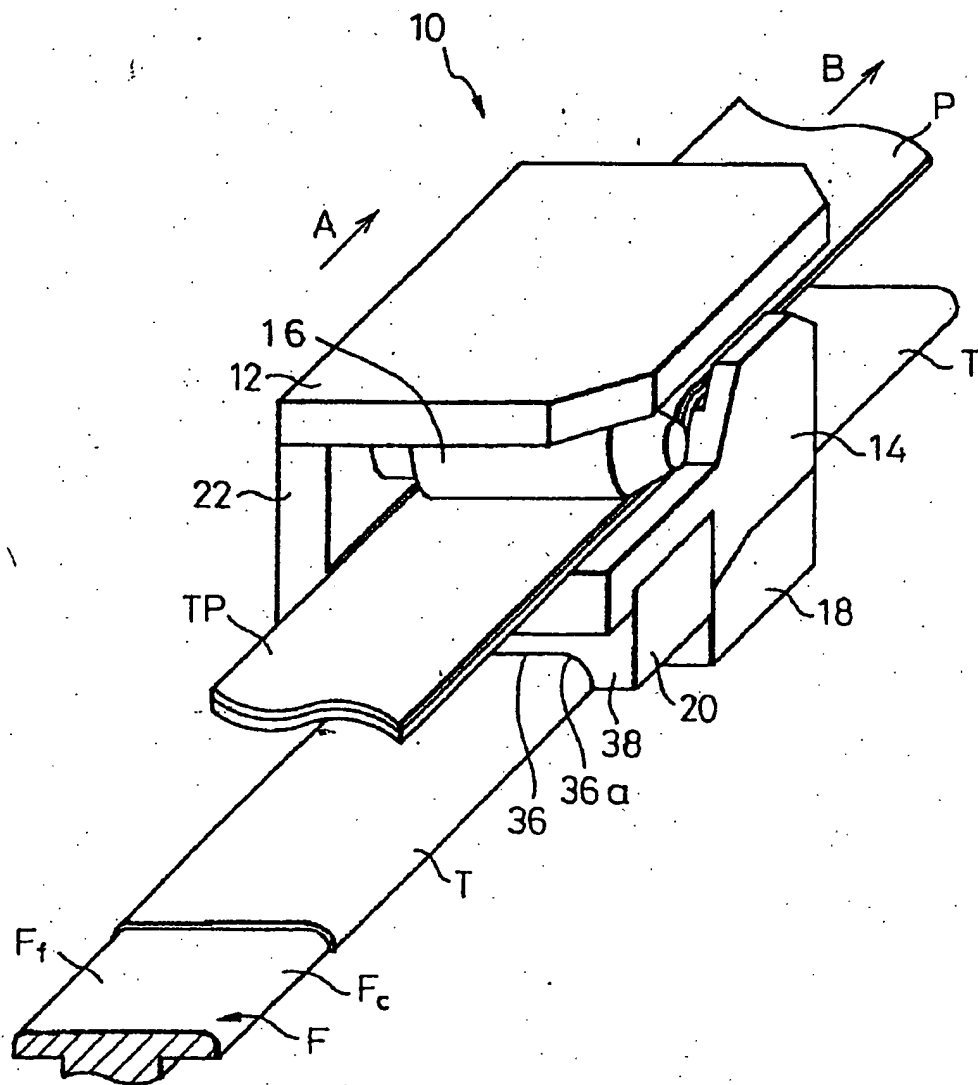
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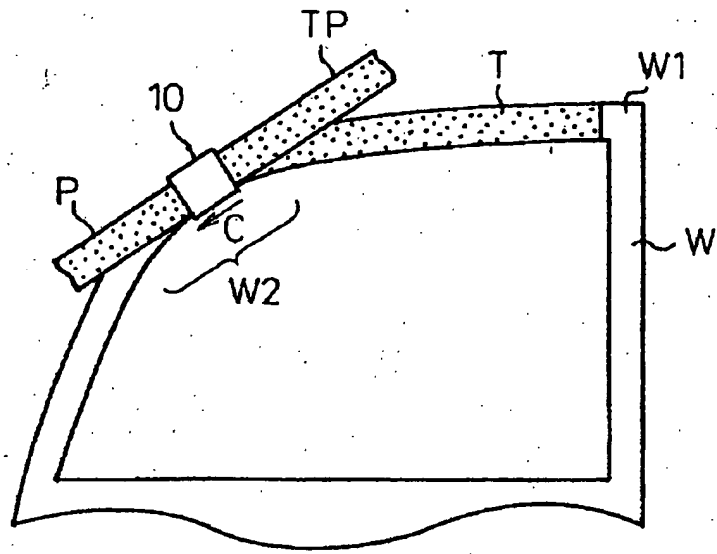


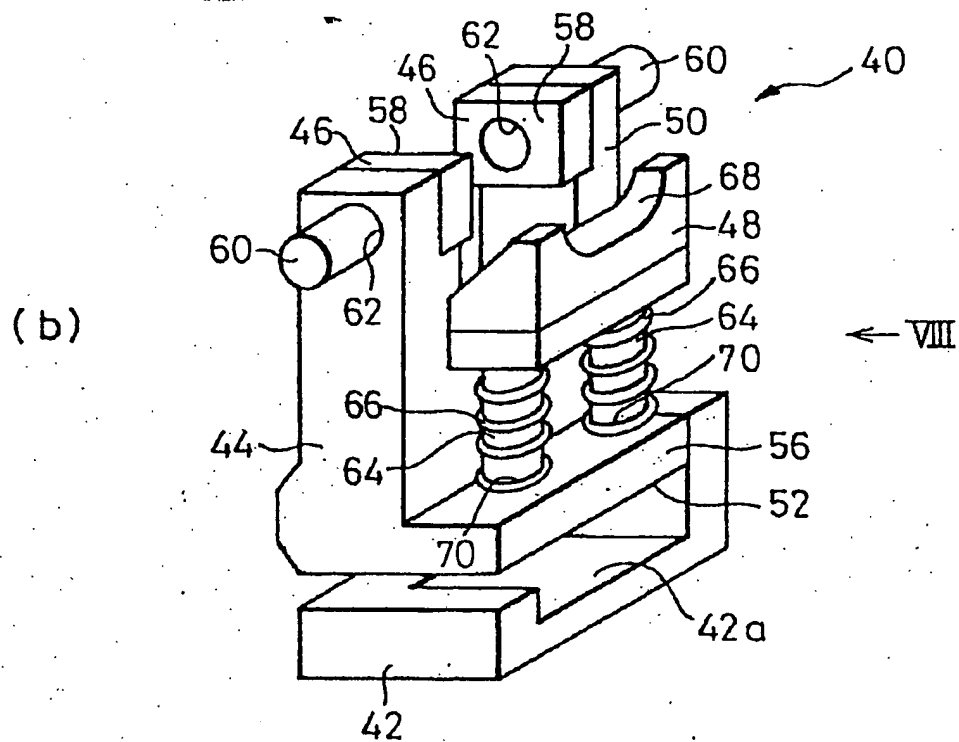
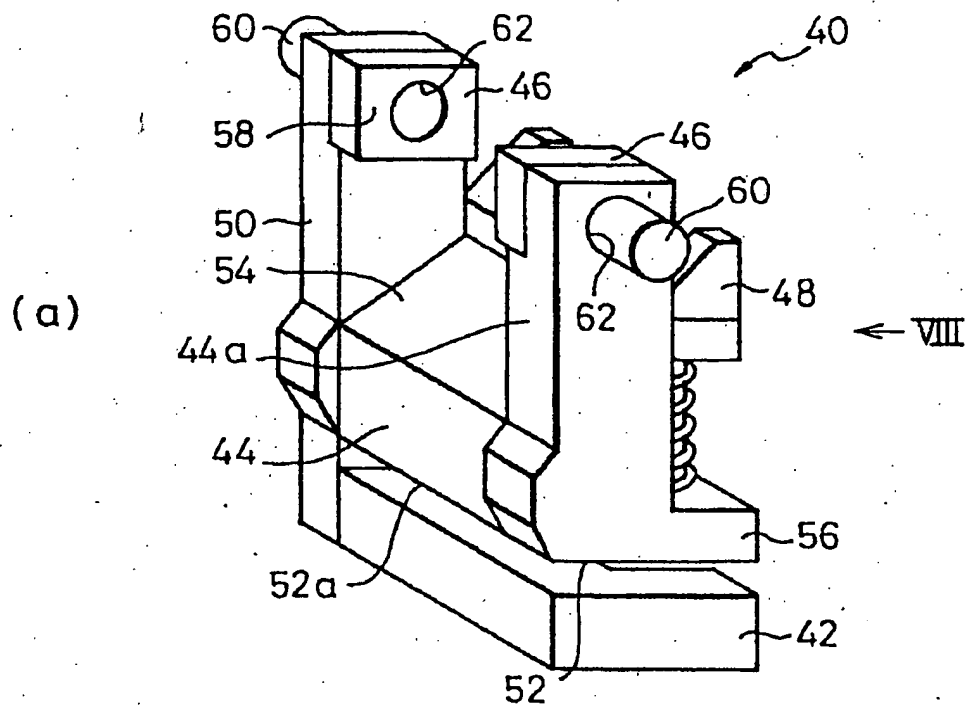
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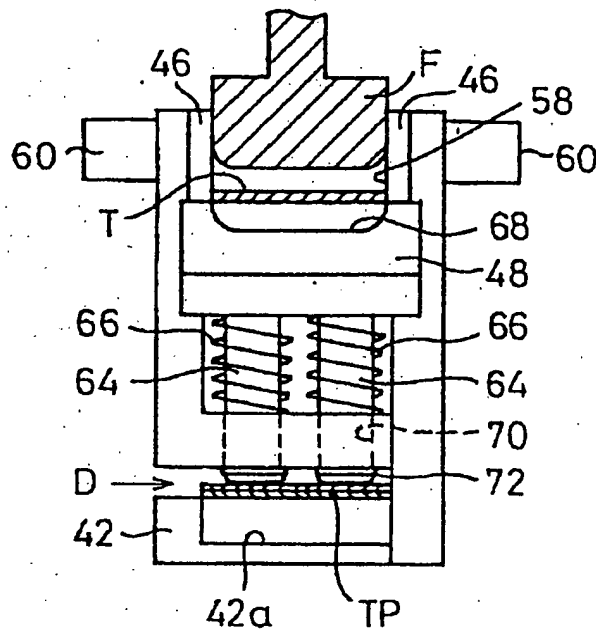




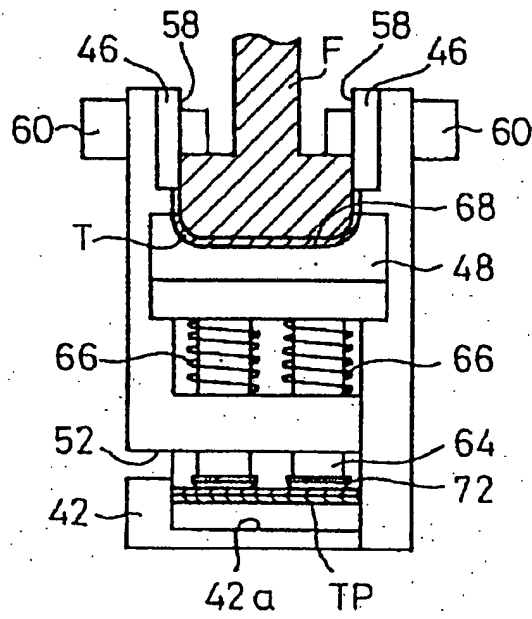


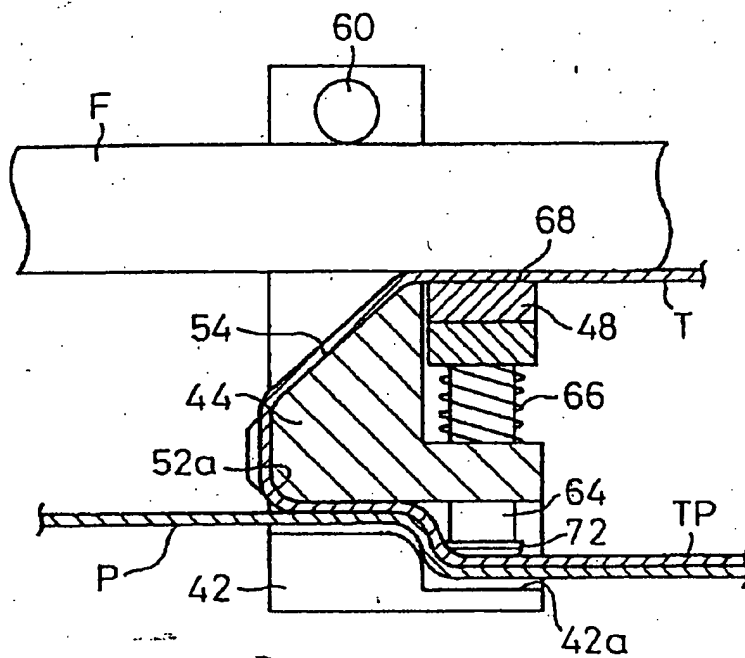


(a)



(b)





[NAME OF DOCUMENT]

ABSTRACT

[ABSTRACT]

[OBJECT] To provide a device for applying an adhesive tape capable of reliably and quickly adhering an adhesive tape having a specific shape to an application region having a variable shape.

[CONSTRUCTION] An application device 10 has a handle 2, a tape sliding block 14, a tension pole 16, guide members 18, an applying head 20, and a supporting wall 22 for supporting the handle 12 and the tape sliding block 14. The tape sliding block 14 has, on the upper side thereof, an entering path for an adhesive tape with release paper and a discharging path for a release paper, and, on the lower side thereof, a guide path downwardly extending towards the applying head 20 for the adhesive tape without the release paper. The tension pole 16 applies a predetermined tension to adhesive tape during an applying operation. • The guide members 18 hold a frame therebetween on the sides of the frame during an applying operation, which enables the application device 10 to move according to the elongated shape of the frame. • The applying head 20 has an application surface 36 including a finishing surface 36a having substantially the same shape as the surface of an application region.

[SELECTED DRAWING] Figure 1